

**Abstract**

**Optical detection of the spatial shape of bodies and body parts  
with in part optically non-visible regions**

5        There is described a method and an apparatus for the optical 3D digitization  
of bodies and body parts which reveal non-visible regions which therefore cannot  
be detected by the 3D digitizer. A mechanical aid is fixed at these regions and  
protrudes into the measurement space visible for the 3D digitizer. On this visible  
part, it is provided with marks and is digitized together with the remaining, visible  
10    body parts. From the spatial position of the marks of these aids, important  
geometrical information of the non-visible parts, such as the spatial position,  
circumferential dimensions, etc., can be calculated, and the 3D model of the body  
or body part incomplete at these points can be completed therewith. Two  
applications from the field of orthopaedics are described by way of example.

15        (Fig. 2)